

Environmental Conditions

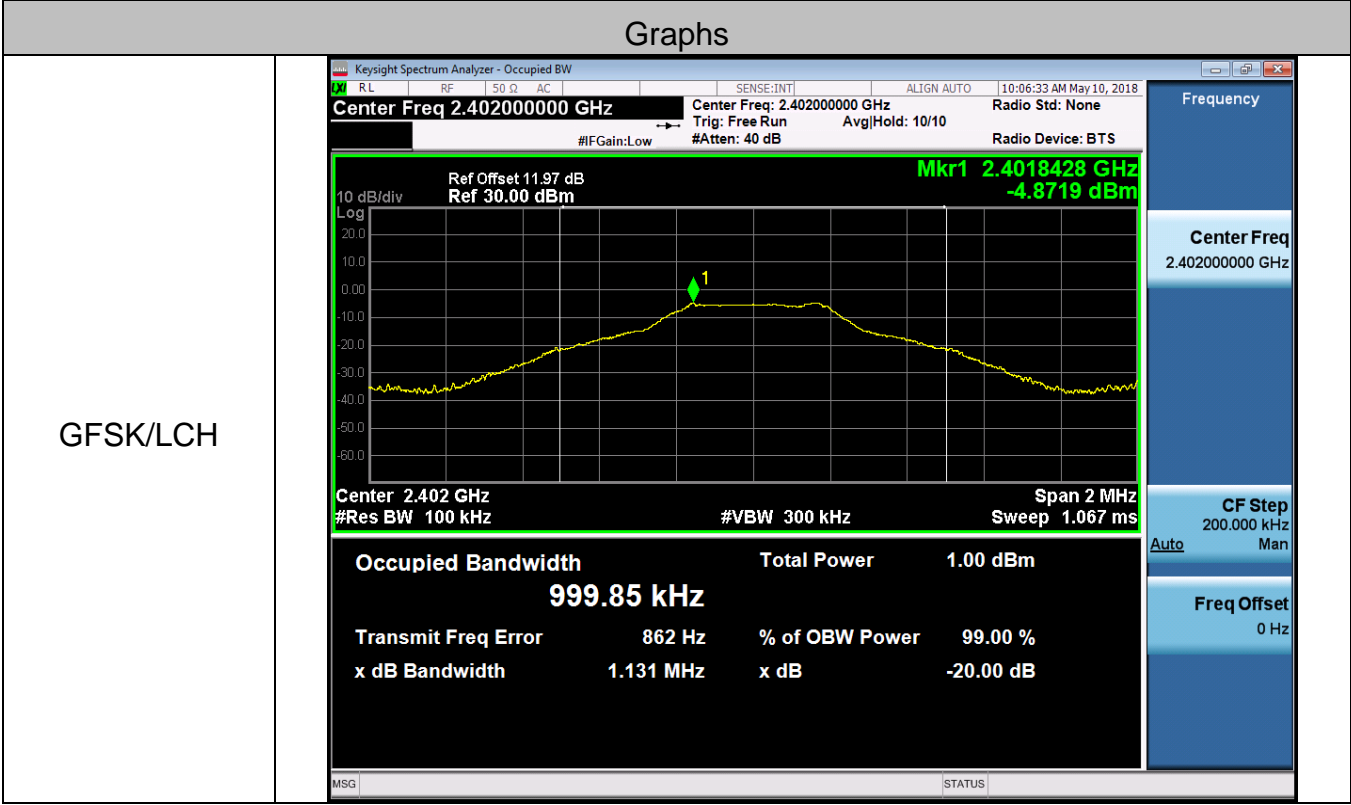
Temperature:	22.9 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.xu
Supervised by:	Tom.Liu

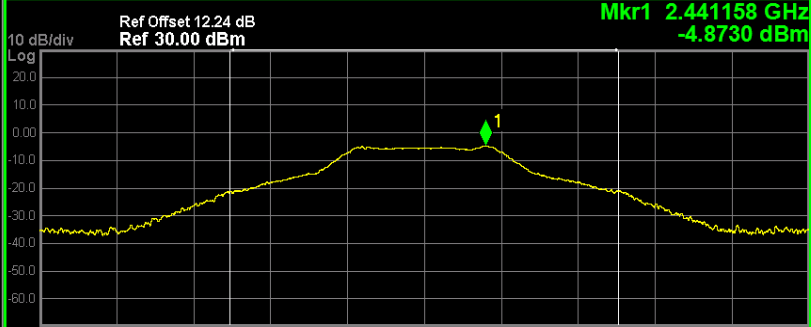

Appendix A): 20dB Bandwidth

Test Result

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.131	Not Specified	PASS
	MCH	1.133	Not Specified	PASS
	HCH	1.137	Not Specified	PASS

Test Graph



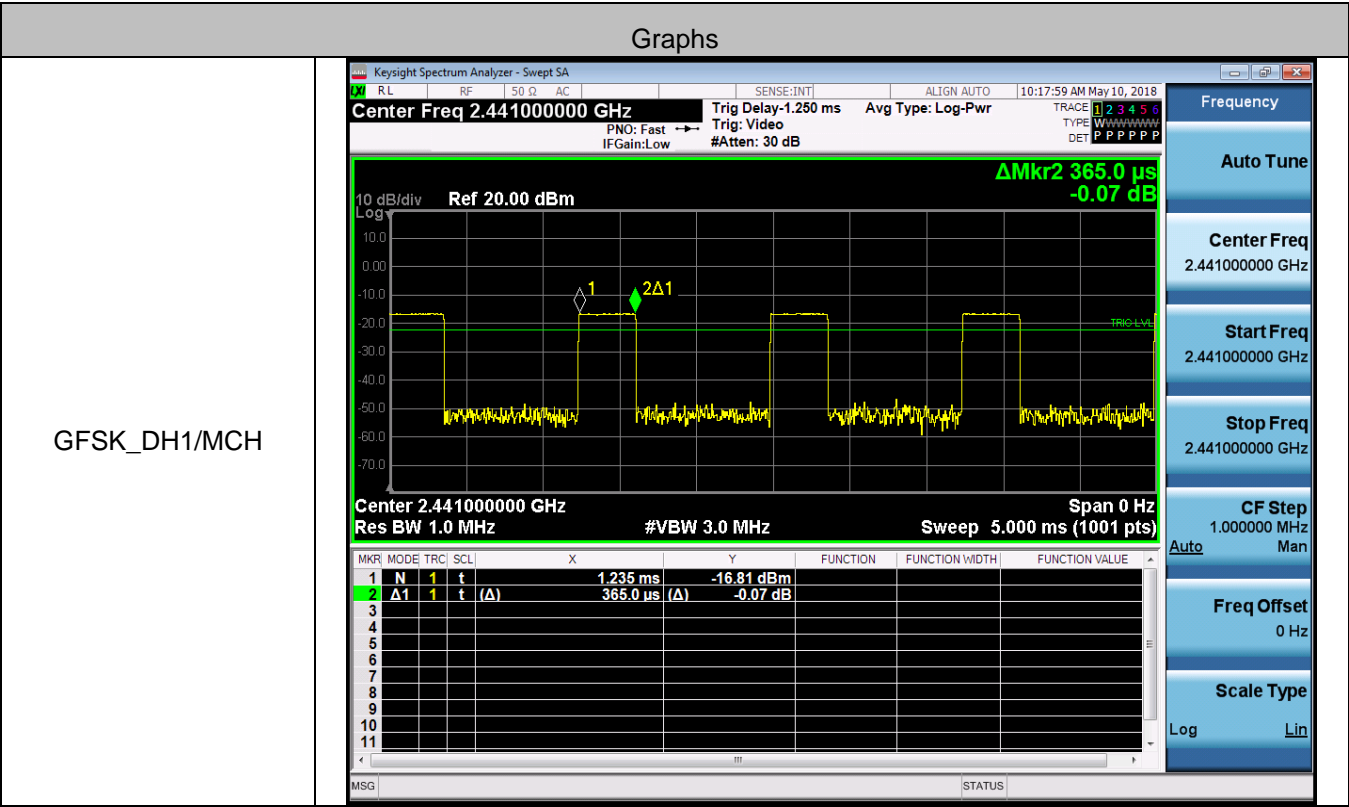
<p>GFSK/MCH</p>	<div><div>Keysight Spectrum Analyzer - Occupied BW</div><div><div>RL</div><div>RF</div><div>50 Ω</div><div>AC</div><div>SENSE:INT</div><div>ALIGN AUTO</div><div>10:09:41 AM May 10, 2018</div></div><div><div>Center Freq 2.441000000 GHz</div><div>Center Freq: 2.441000000 GHz</div><div>Trig: Free Run</div><div>Avg/Hold: 10/10</div><div>Radio Std: None</div><div>#IFGain:Low</div><div>#Atten: 40 dB</div><div>Radio Device: BTS</div></div><div><div>10 dB/div</div><div>Ref Offset 12.24 dB</div><div>Ref 30.00 dBm</div><div>Mkr1 2.441158 GHz</div><div>-4.8730 dBm</div></div><div><div>Center 2.441 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Span 2 MHz</div><div>Sweep 1.067 ms</div></div><div><div>Occupied Bandwidth</div><div>1.0035 MHz</div><div>Total Power</div><div>1.01 dBm</div><div>Transmit Freq Error</div><div>783 Hz</div><div>% of OBW Power</div><div>99.00 %</div><div>x dB Bandwidth</div><div>1.133 MHz</div><div>x dB</div><div>-20.00 dB</div></div><div><div>MSG</div><div>STATUS</div></div></div> <div><div>Frequency</div><div>Center Freq</div><div>2.441000000 GHz</div><div>CF Step</div><div>200.000 kHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0 Hz</div></div>
<p>GFSK/HCH</p>	<div><div>Keysight Spectrum Analyzer - Occupied BW</div><div><div>RL</div><div>RF</div><div>50 Ω</div><div>AC</div><div>SENSE:INT</div><div>ALIGN AUTO</div><div>10:12:49 AM May 10, 2018</div></div><div><div>Center Freq 2.480000000 GHz</div><div>Center Freq: 2.480000000 GHz</div><div>Trig: Free Run</div><div>Avg/Hold: 10/10</div><div>Radio Std: None</div><div>#IFGain:Low</div><div>#Atten: 40 dB</div><div>Radio Device: BTS</div></div><div><div>10 dB/div</div><div>Ref Offset 12.24 dB</div><div>Ref 30.00 dBm</div><div>Mkr1 2.480162 GHz</div><div>-4.9410 dBm</div></div><div><div>Center 2.48 GHz</div><div>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Span 2 MHz</div><div>Sweep 1.067 ms</div></div><div><div>Occupied Bandwidth</div><div>1.0043 MHz</div><div>Total Power</div><div>0.91 dBm</div><div>Transmit Freq Error</div><div>2.199 kHz</div><div>% of OBW Power</div><div>99.00 %</div><div>x dB Bandwidth</div><div>1.137 MHz</div><div>x dB</div><div>-20.00 dB</div></div><div><div>MSG</div><div>STATUS</div></div></div> <div><div>Frequency</div><div>Center Freq</div><div>2.480000000 GHz</div><div>CF Step</div><div>200.000 kHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0 Hz</div></div>

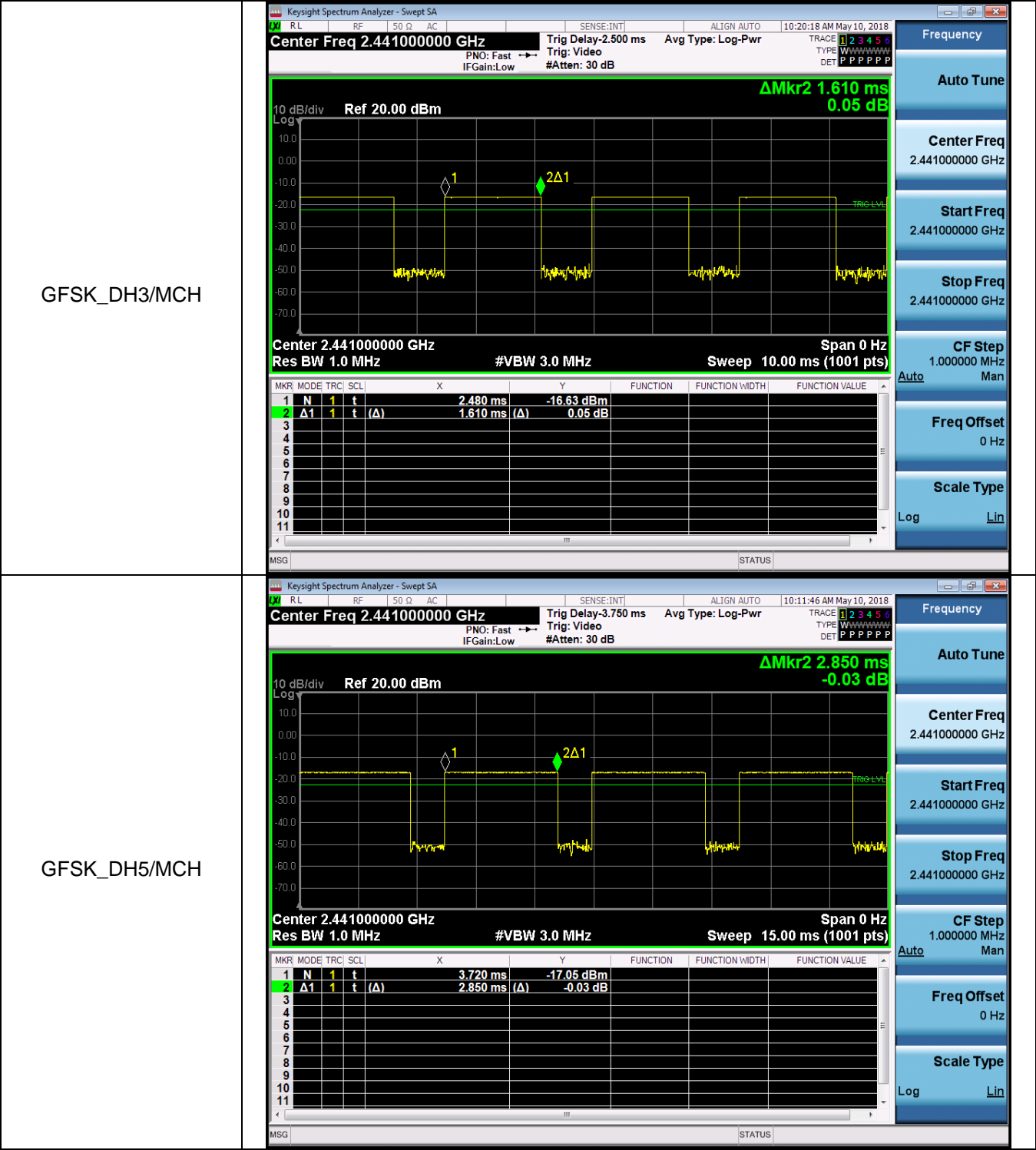
Appendix B): Dwell Time

Result Table

Mode	Packet	Chann el	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdic t
GFSK	DH1	MCH	0.37	320	0.118	0.4	PASS
GFSK	DH3	MCH	1.61	160	0.258	0.4	PASS
GFSK	DH5	MCH	2.85	106.7	0.304	0.4	PASS

Test Graph



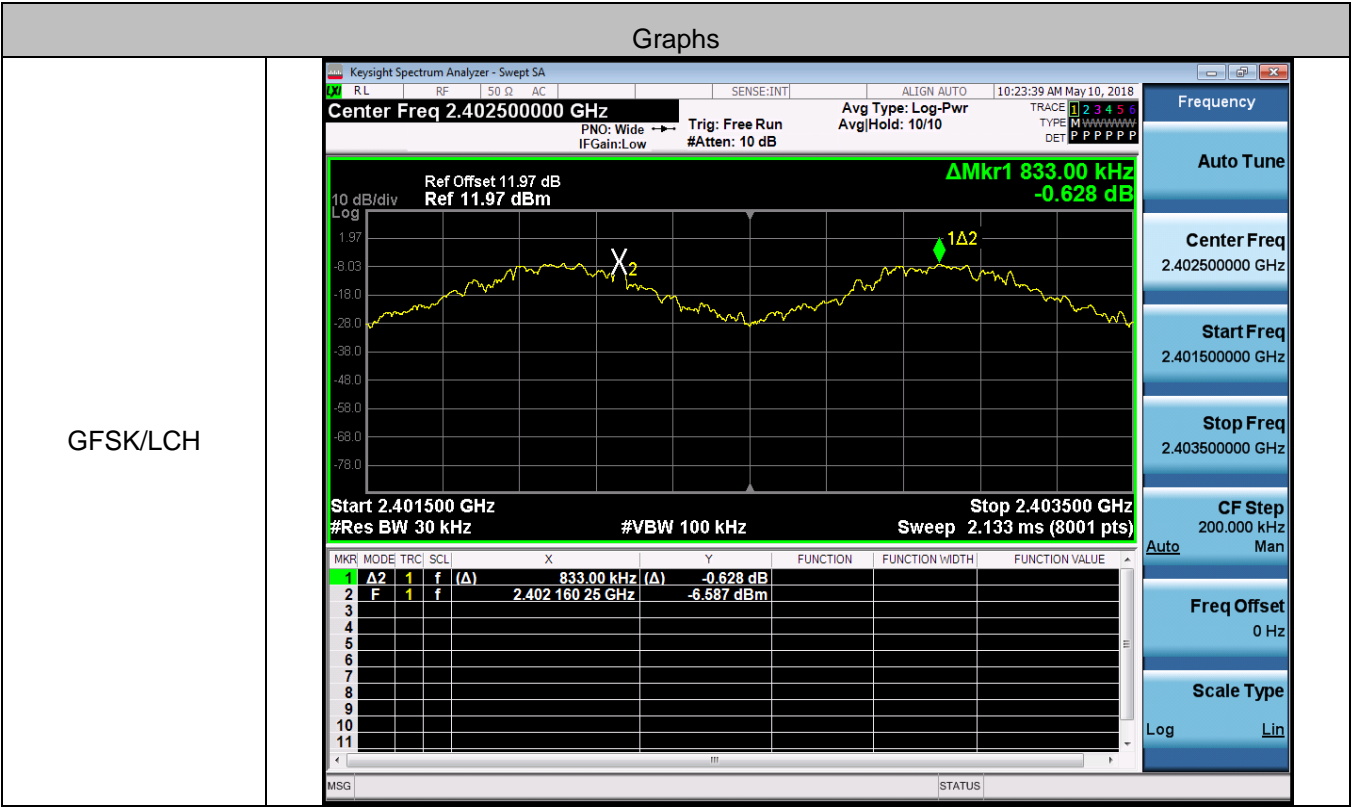


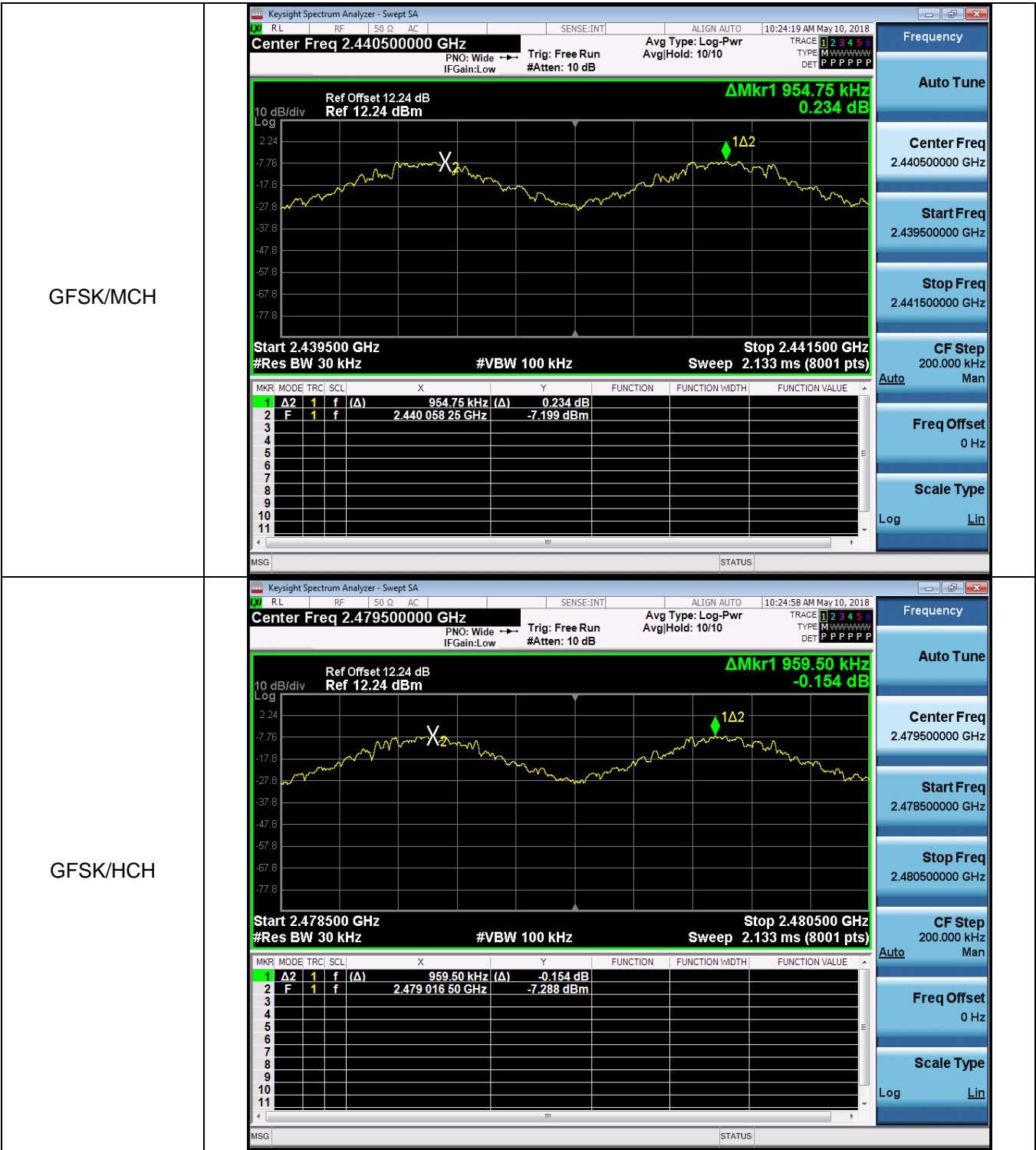
Appendix C): Carrier Frequency Separation

Result Table

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz] 2/3*20dB Bandwidth	Verdict
GFSK	LCH	0.833	0.648	PASS
	MCH	0.955	0.678	PASS
	HCH	0.959	0.687	PASS

Test Graph



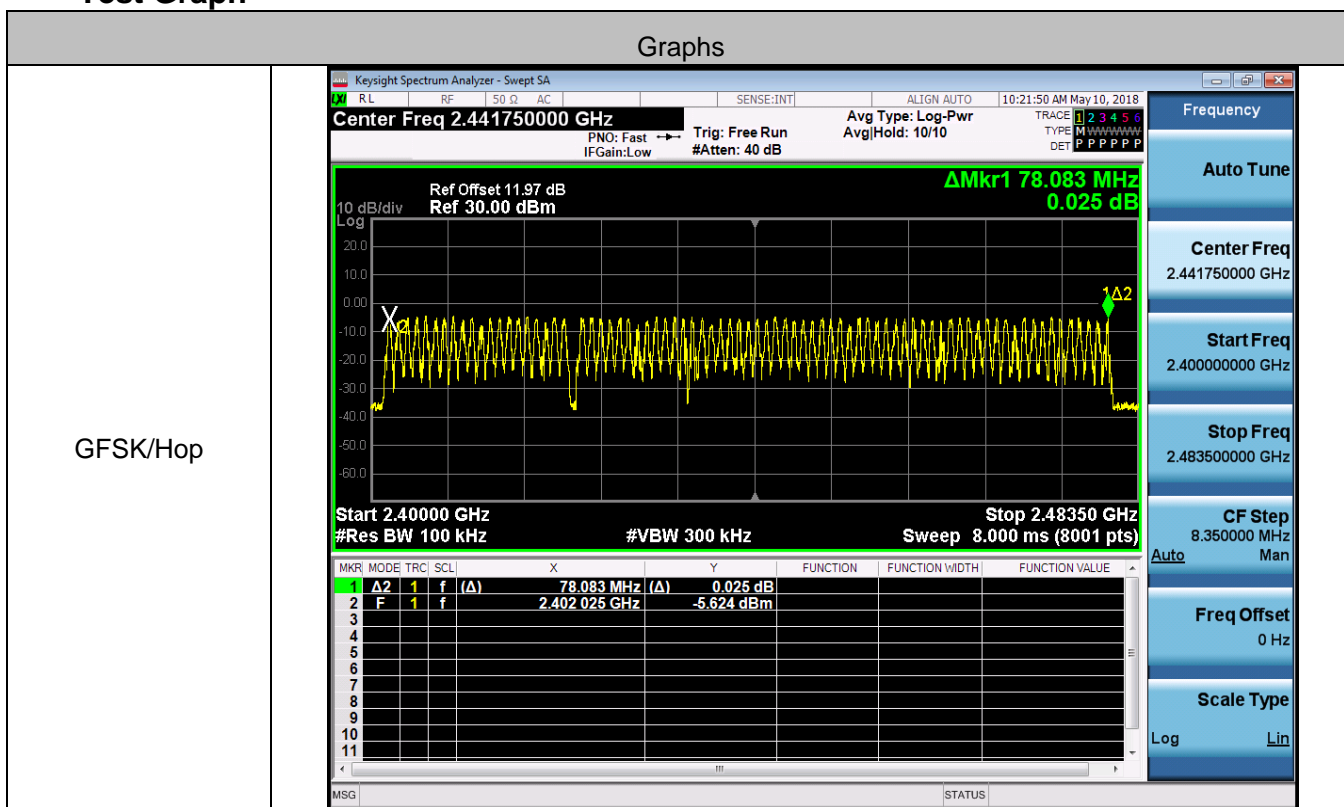


Appendix D): Hopping Channel Number

Result Table

Mode	Channel.	Number of Hopping Channel	Verdict
GFSK	Hop	79	PASS

Test Graph

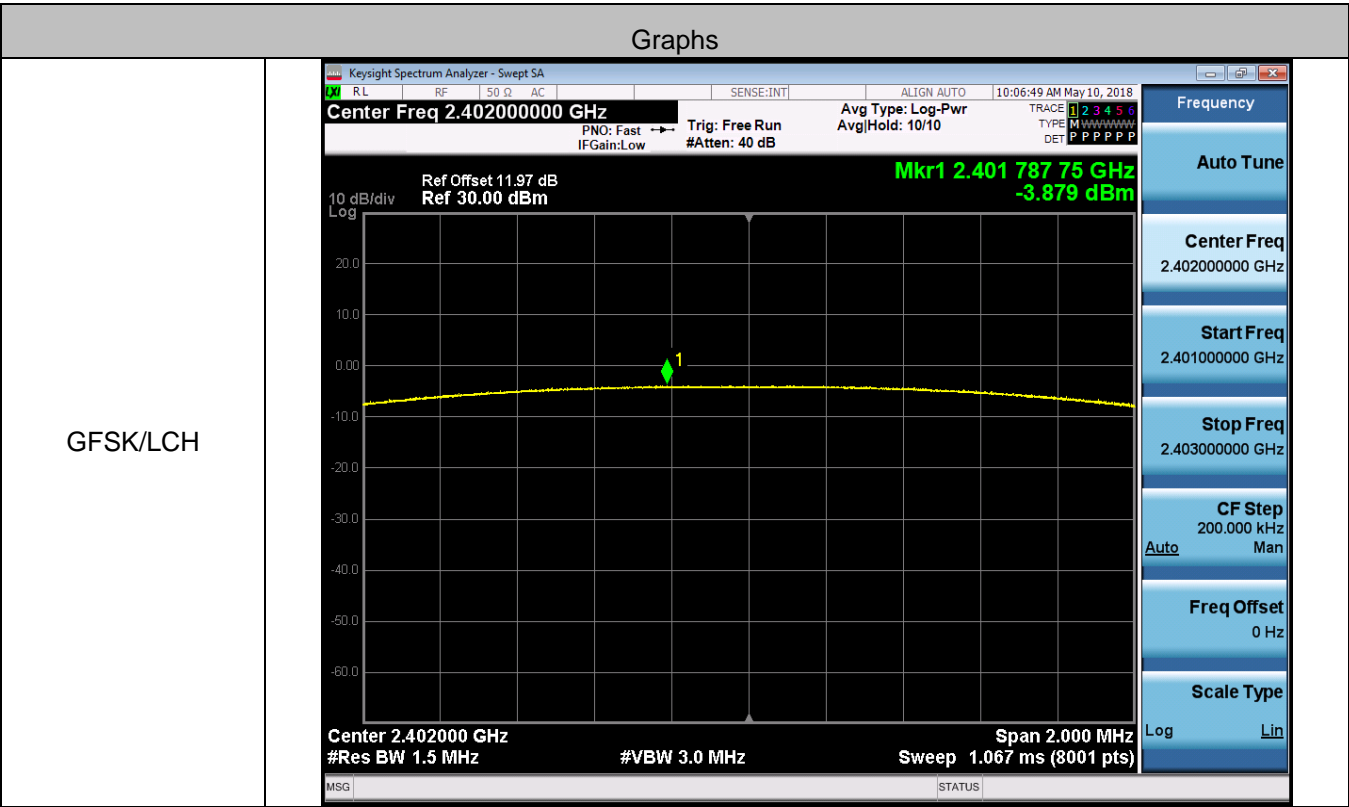


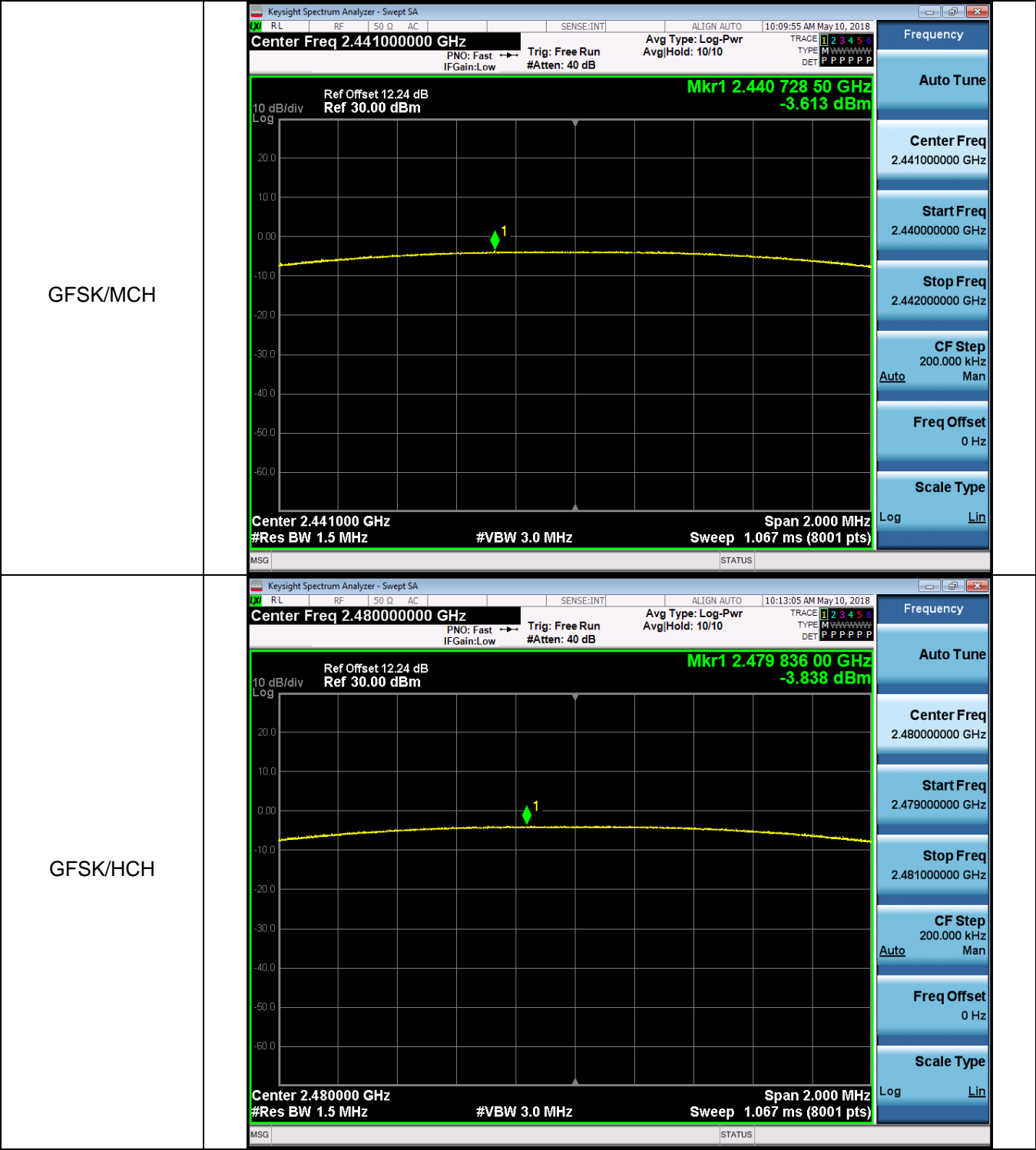
Appendix E): Conducted Peak Output Power

Result Table

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.879	21	PASS
	MCH	-3.613	21	PASS
	HCH	-3.838	21	PASS

Test Graph



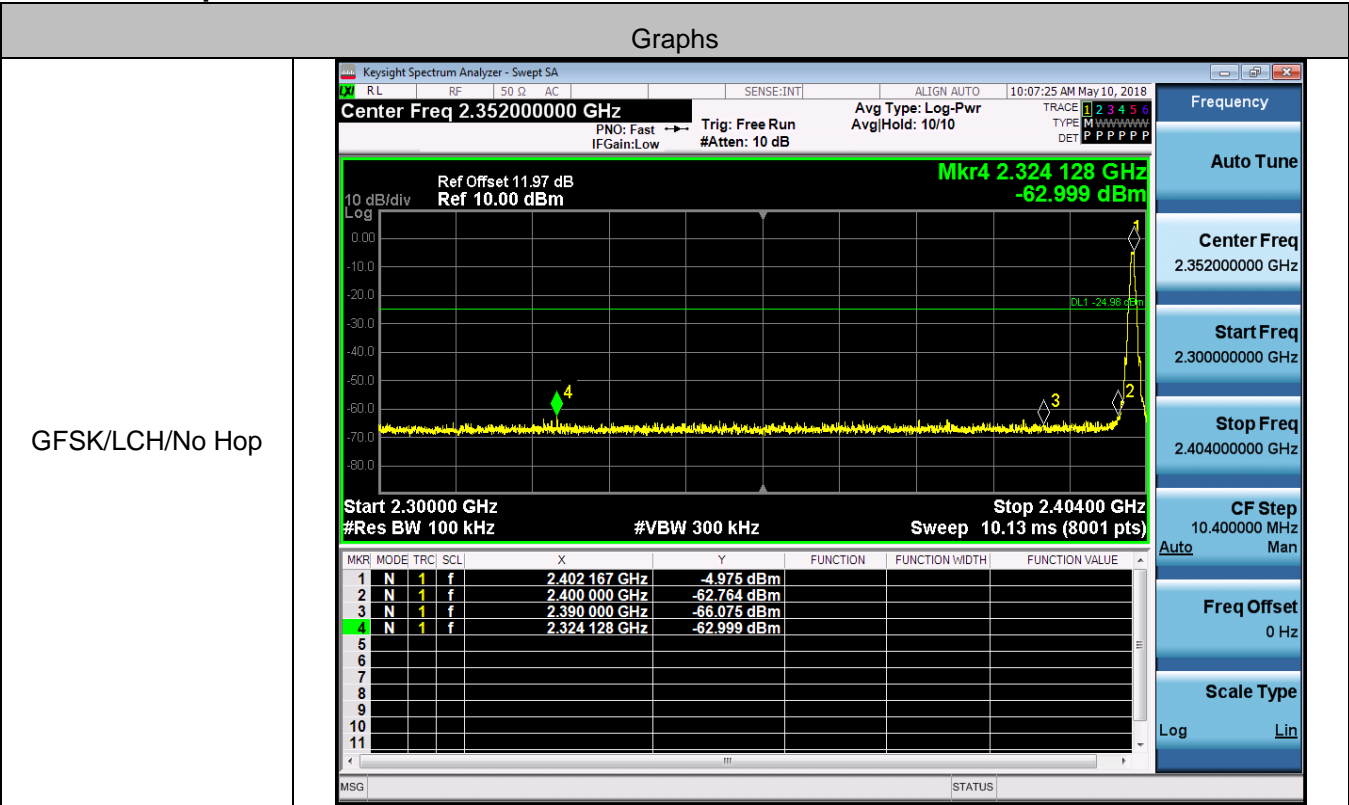


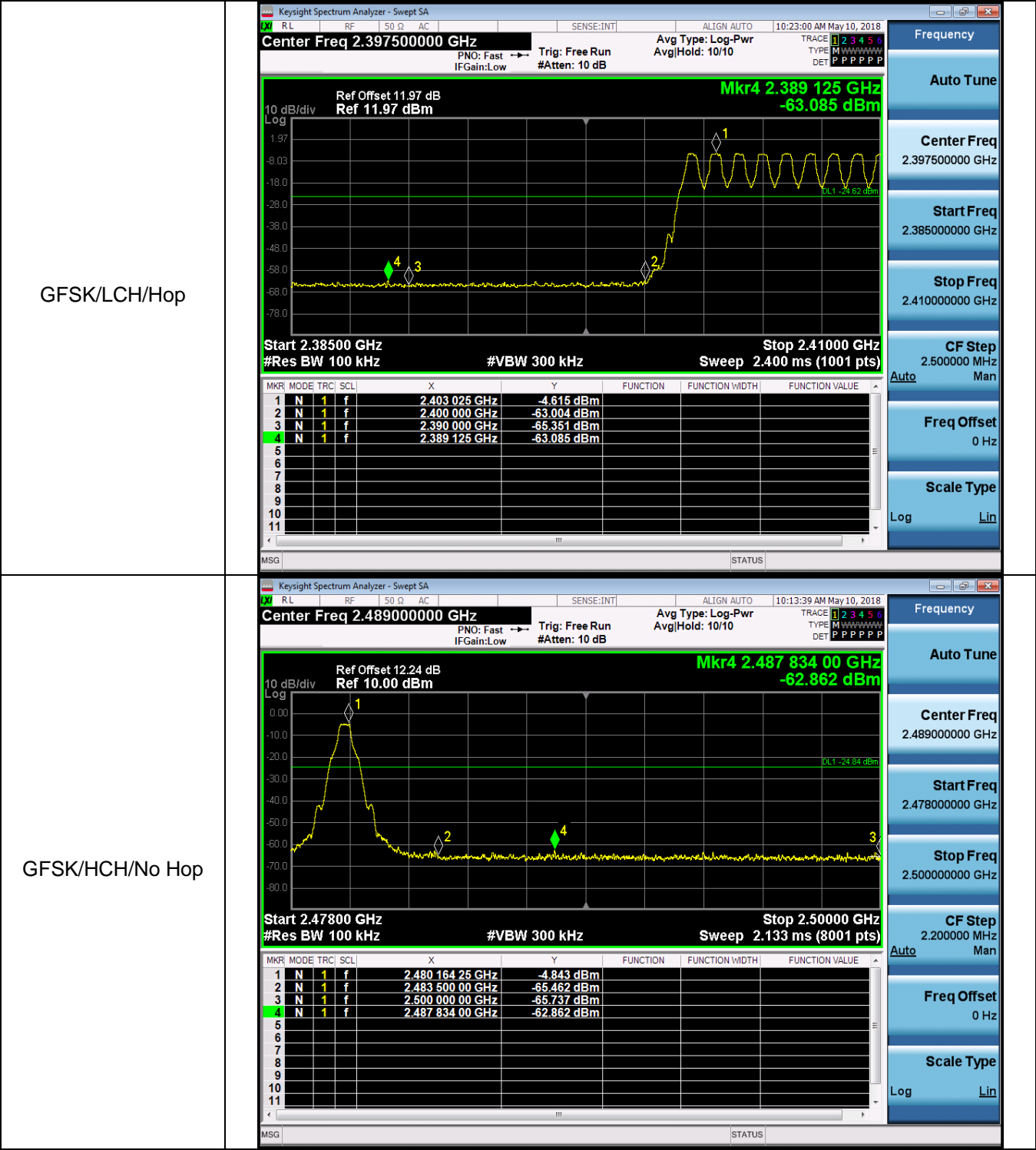
Appendix F): Band-edge for RF Conducted Emissions

Result Table

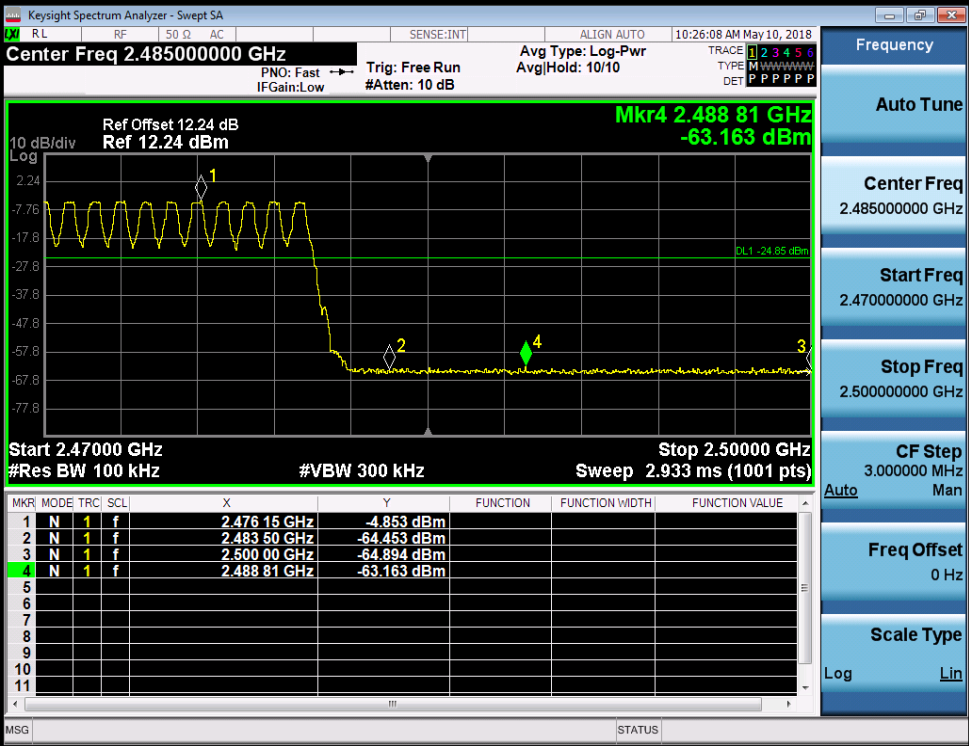
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-4.975	Off	-62.764	-24.98	PASS
			-4.615	On	-63.004	-24.62	PASS
GFSK	HCH	2480	-4.843	Off	-62.862	-24.84	PASS
			-4.853	On	-63.163	-24.85	PASS

Test Graph





GFSK/HCH/Hop

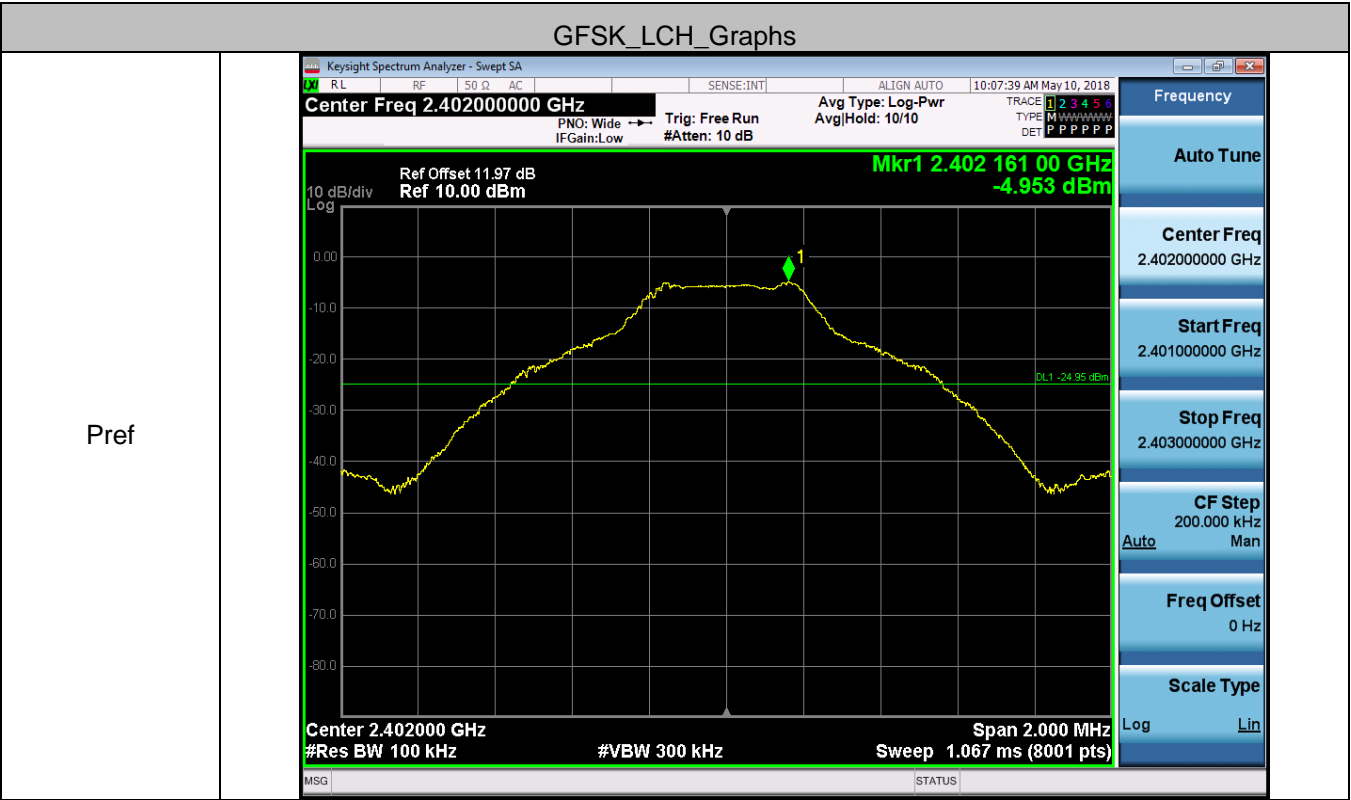


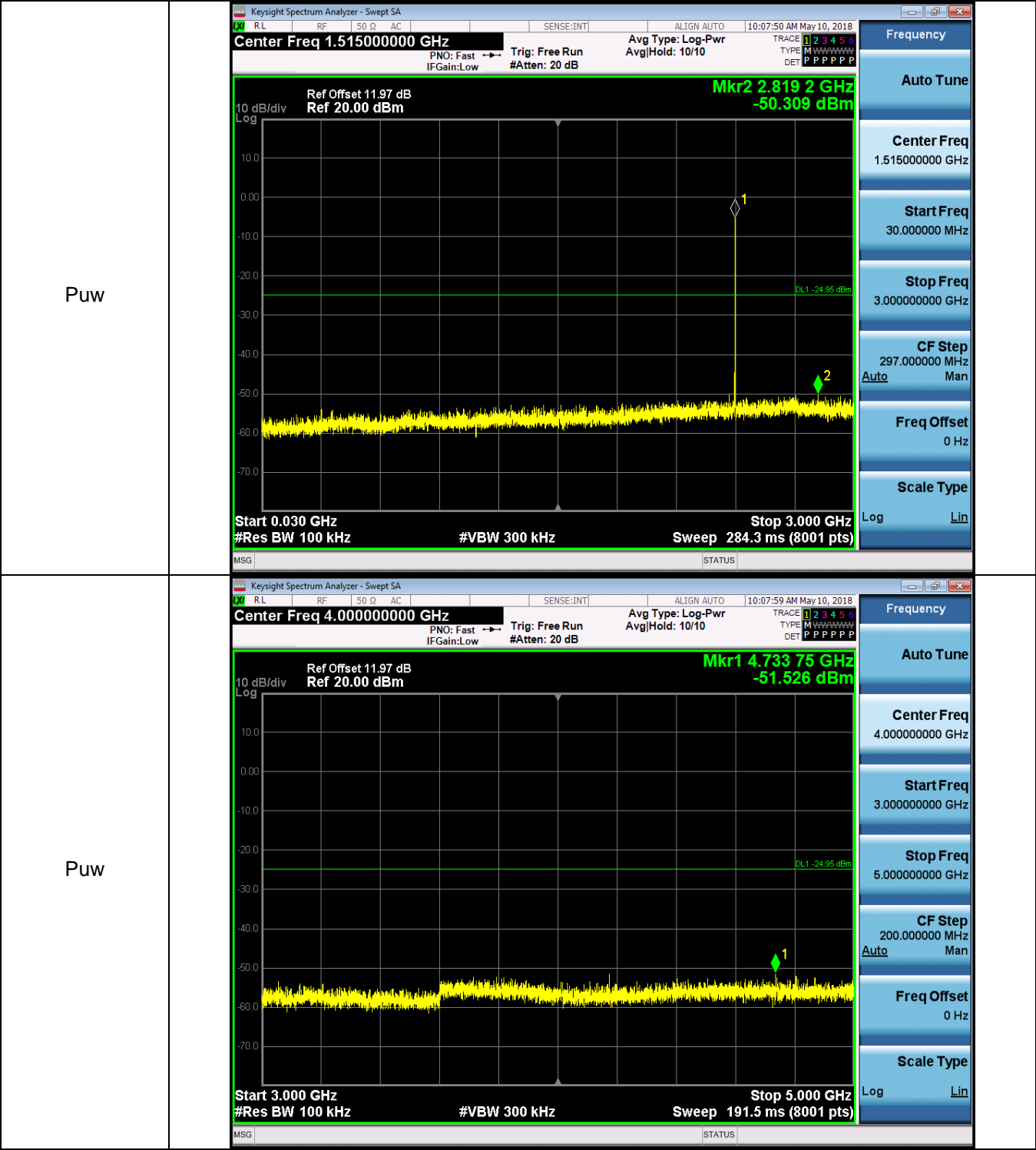
Appendix G): RF Conducted Spurious Emissions

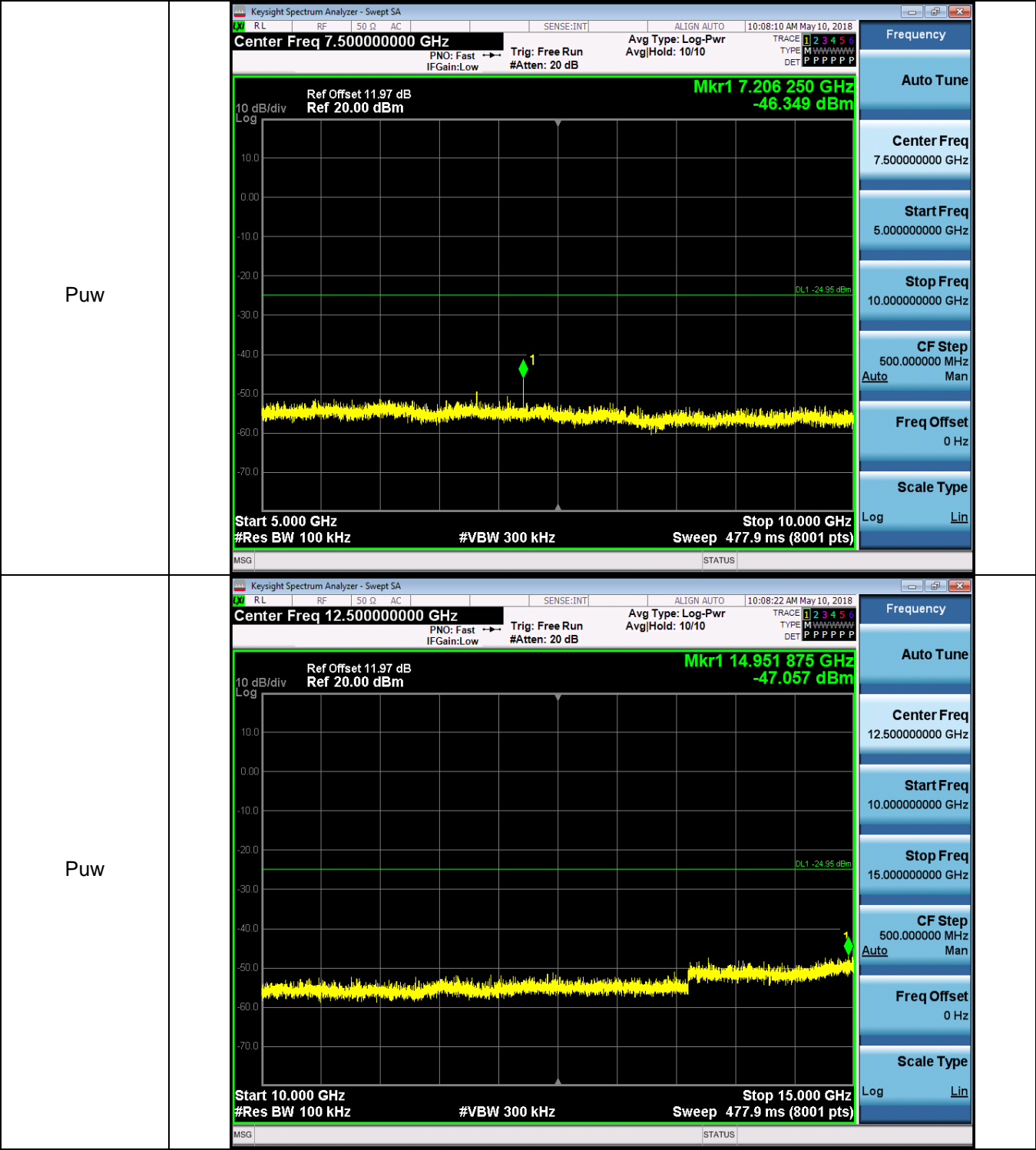
Result Table

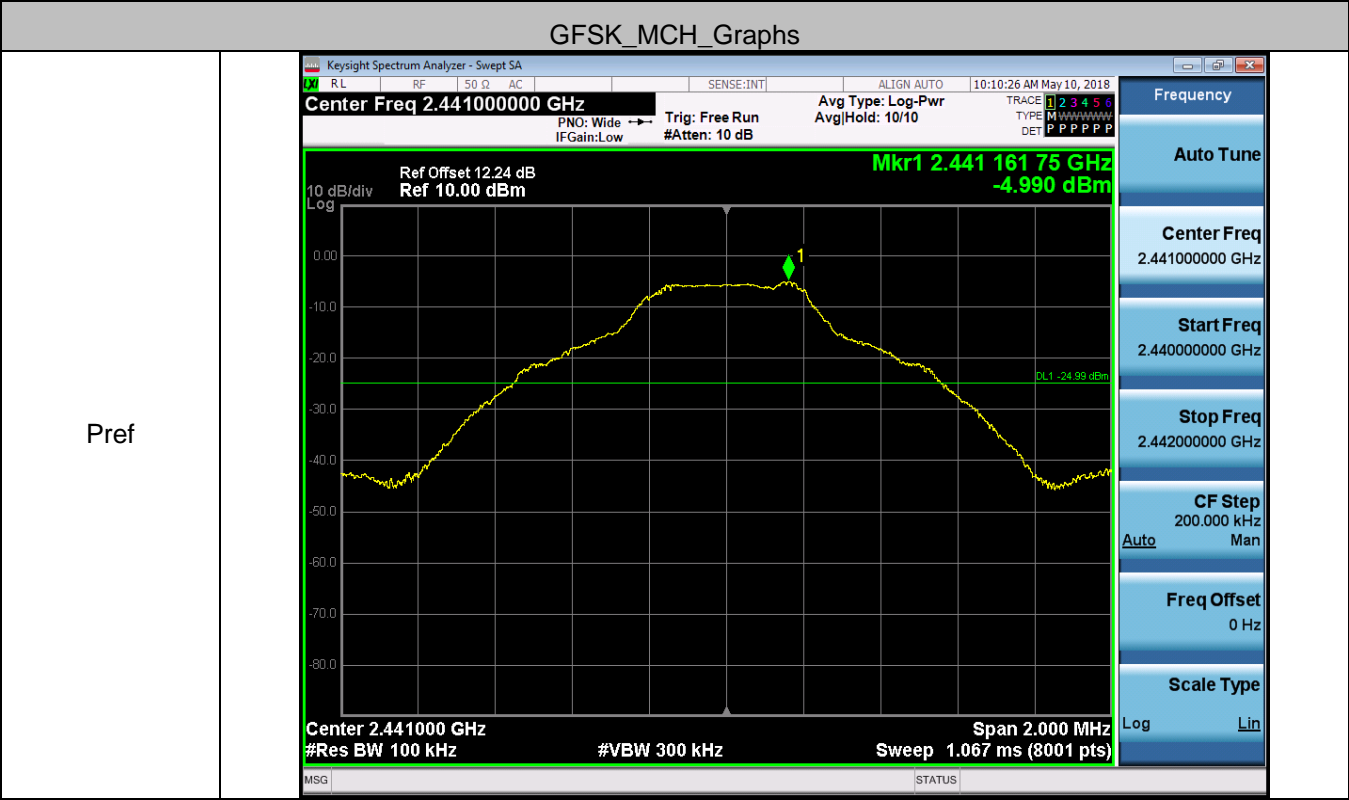
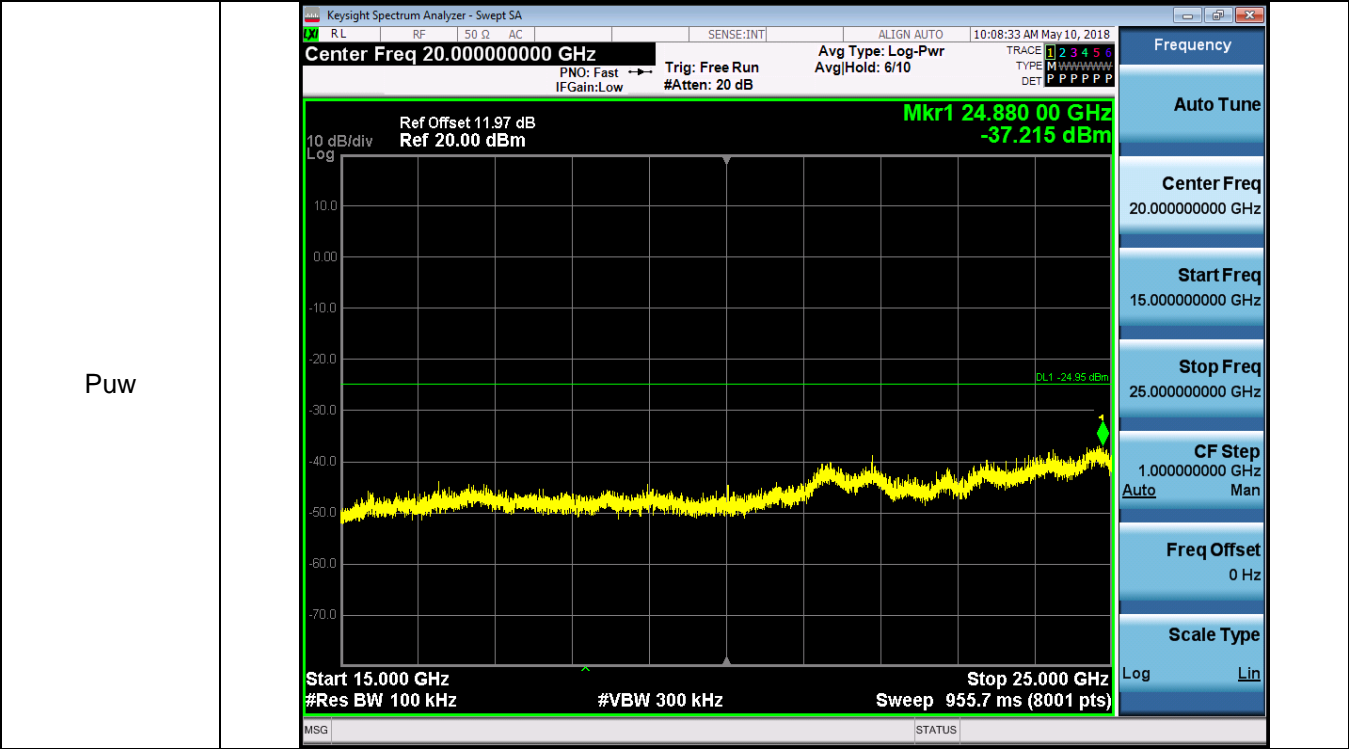
Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
GFSK	LCH	-4.953	<Limit	PASS
GFSK	MCH	-4.99	<Limit	PASS
GFSK	HCH	-4.879	<Limit	PASS

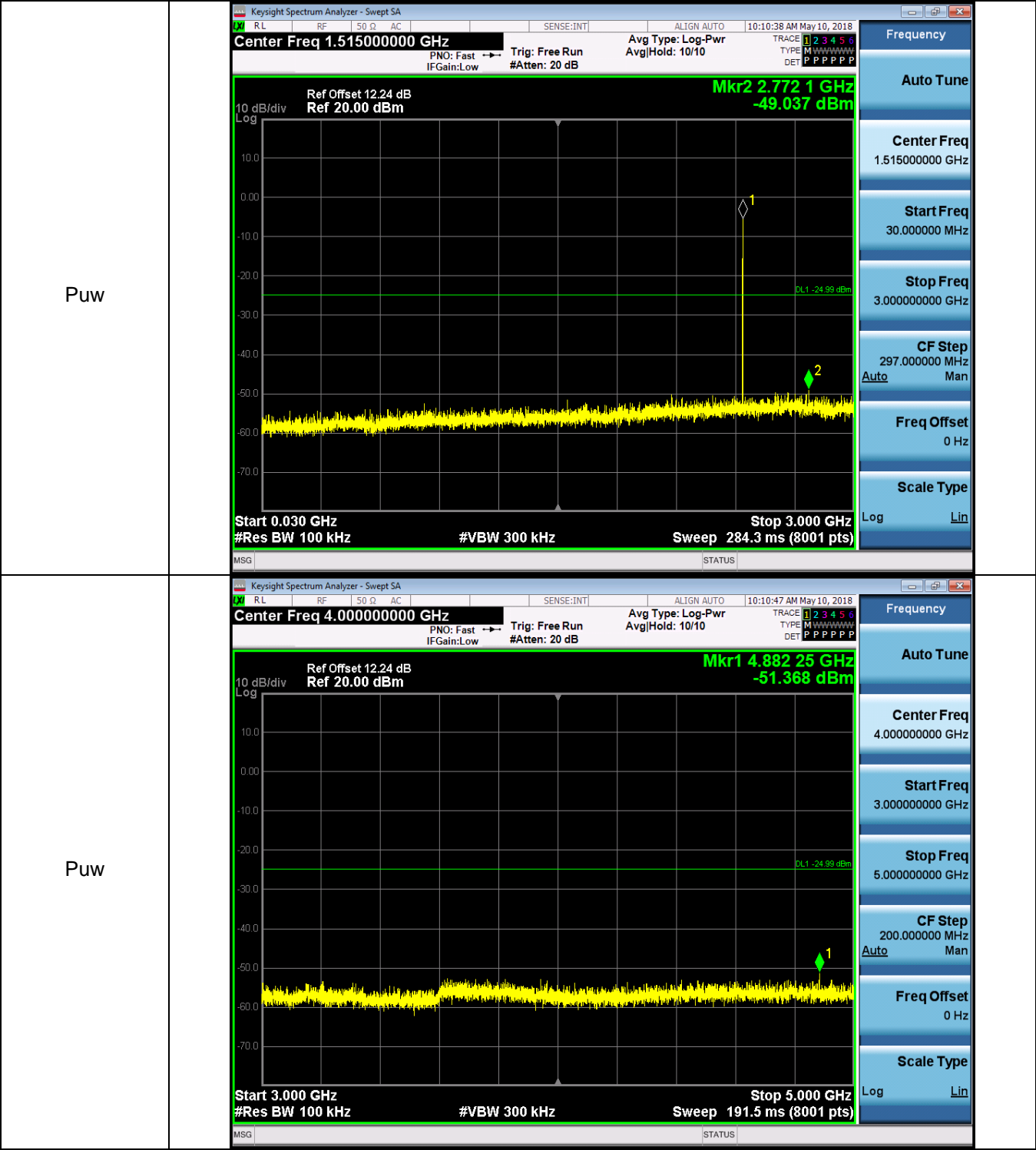
Test Graph

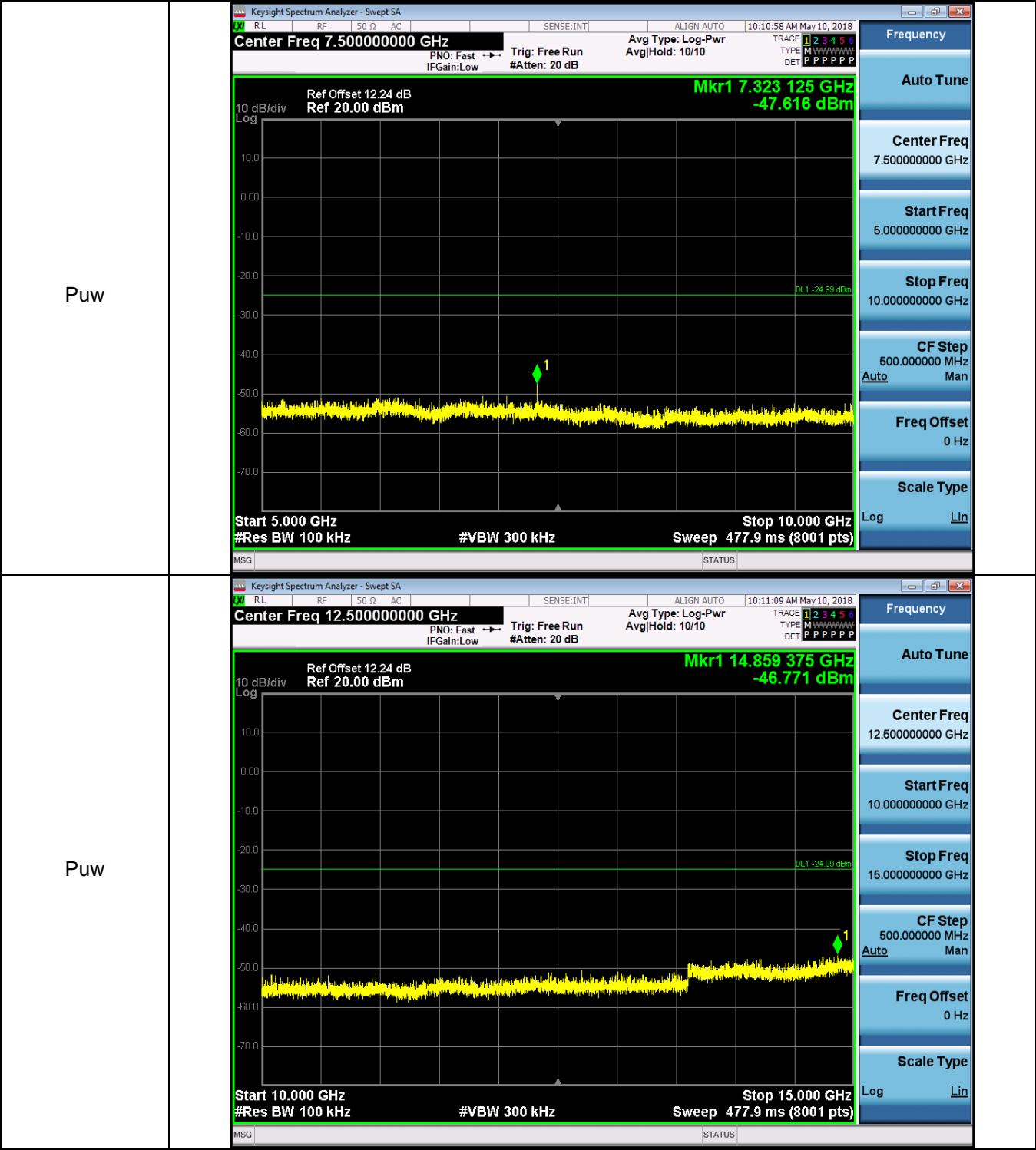


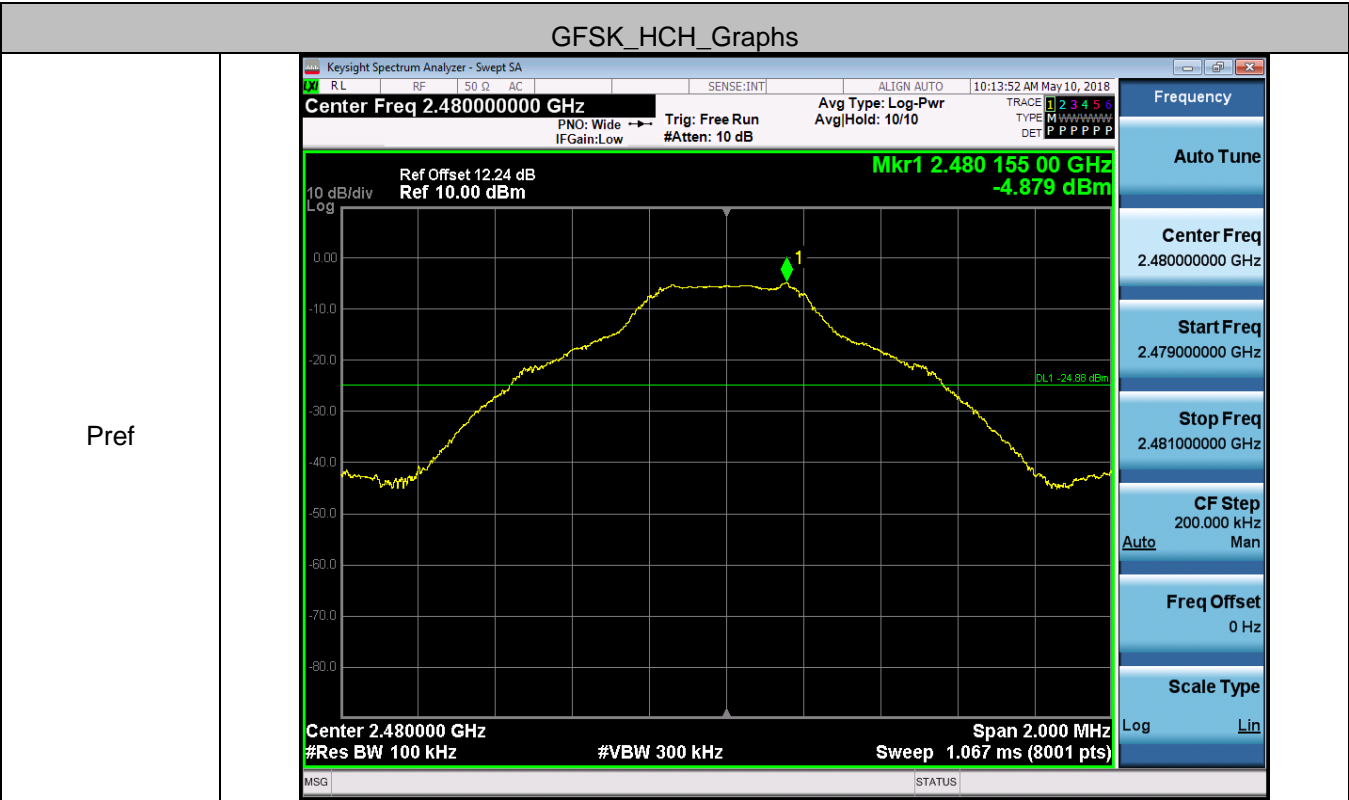
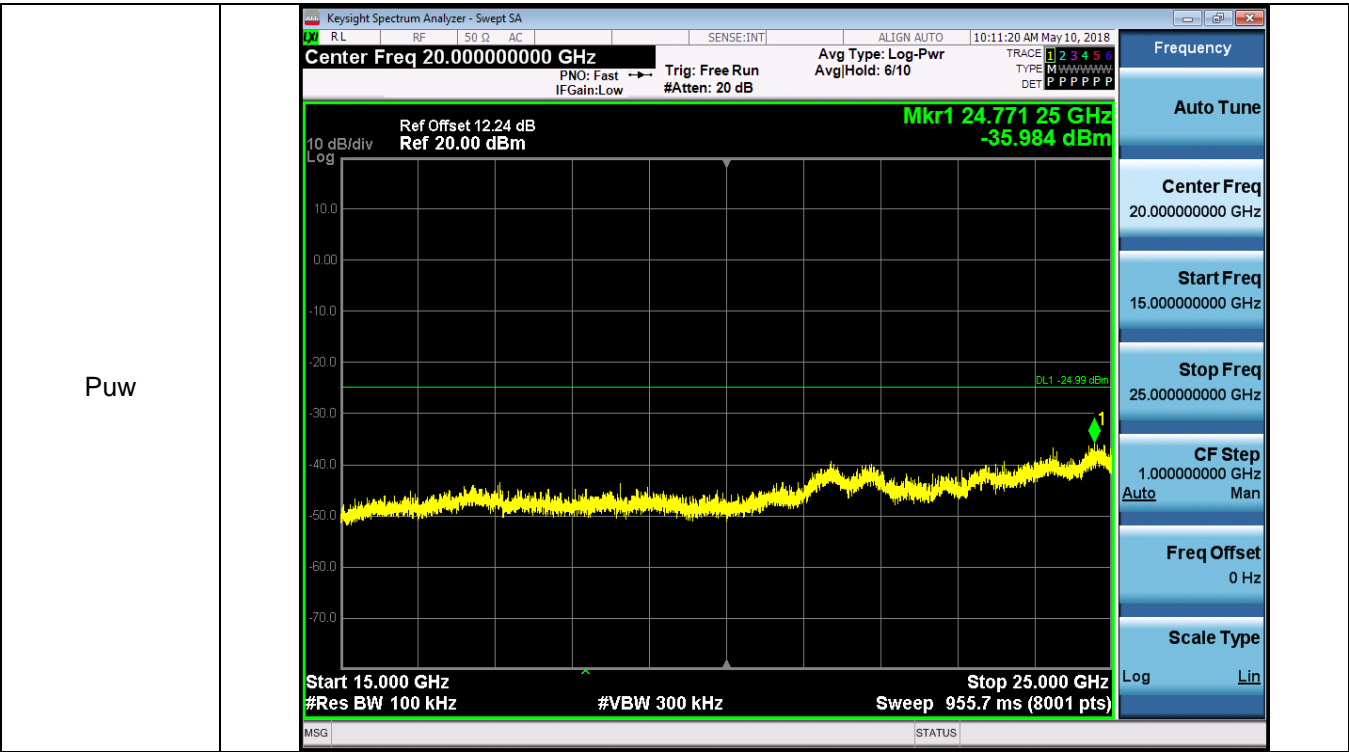


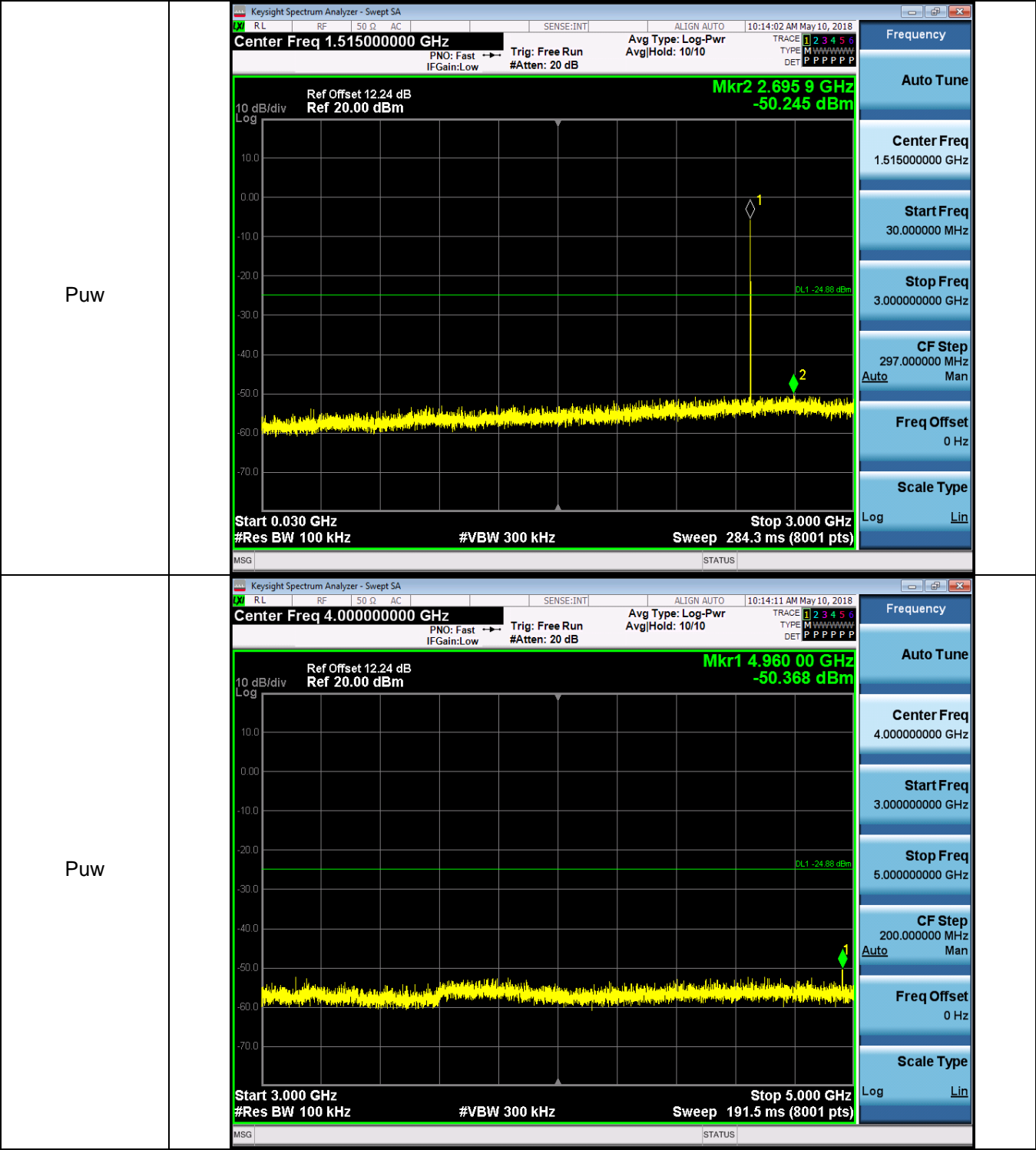


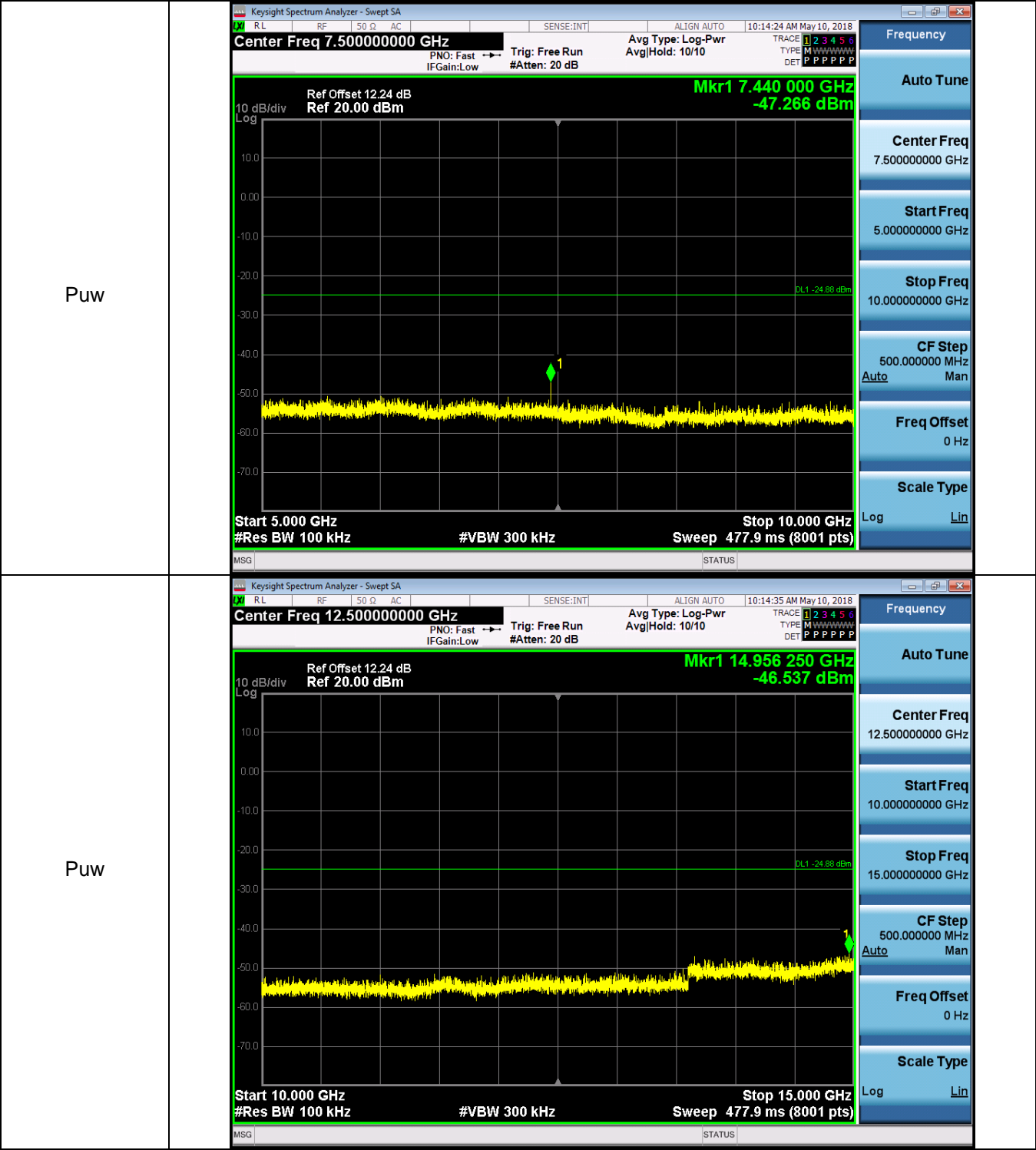


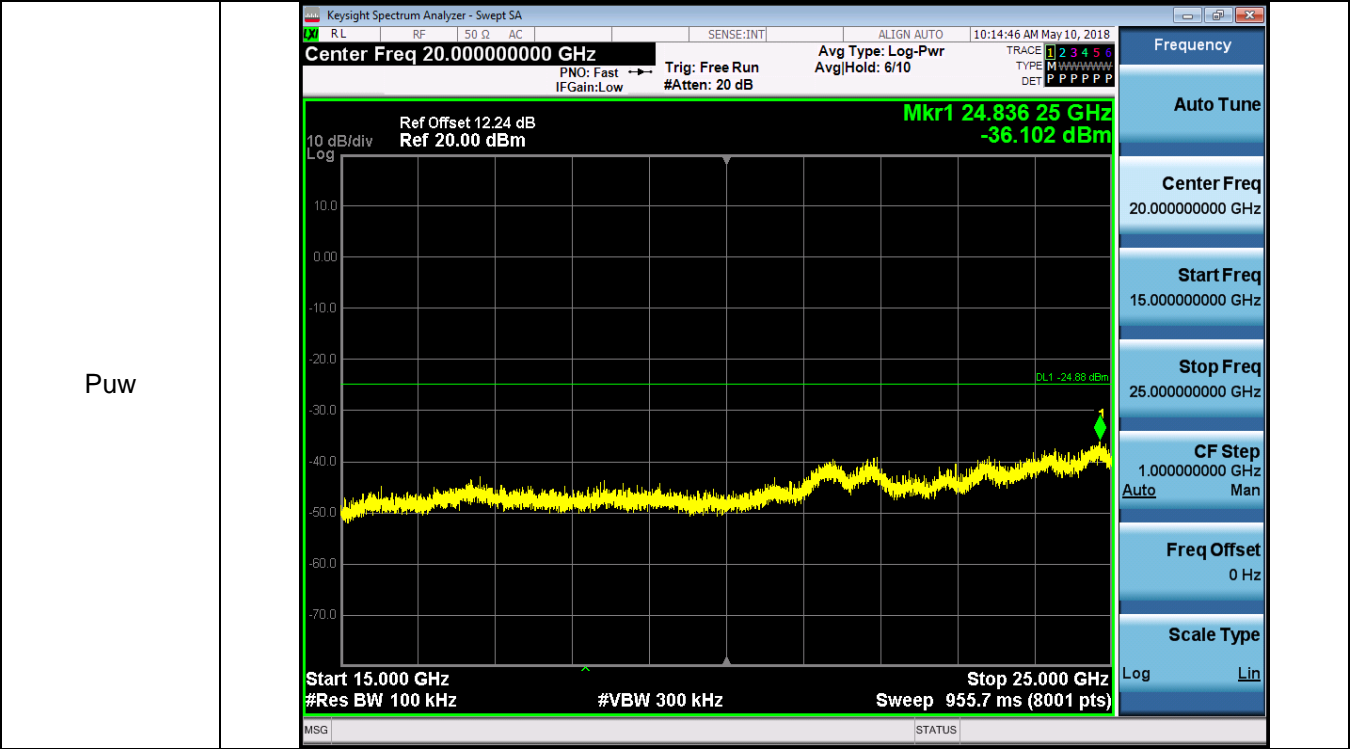










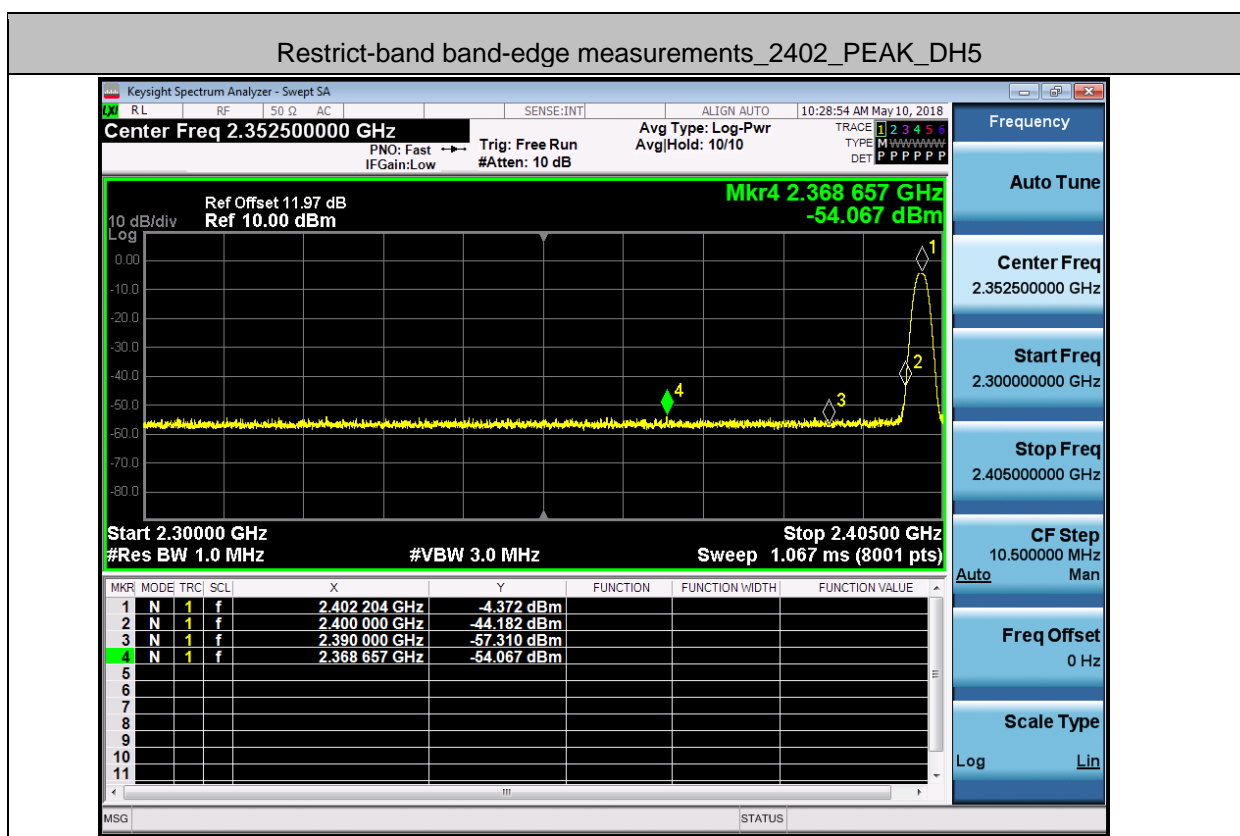


. Appendix H):Restrict-band band-edge measurements

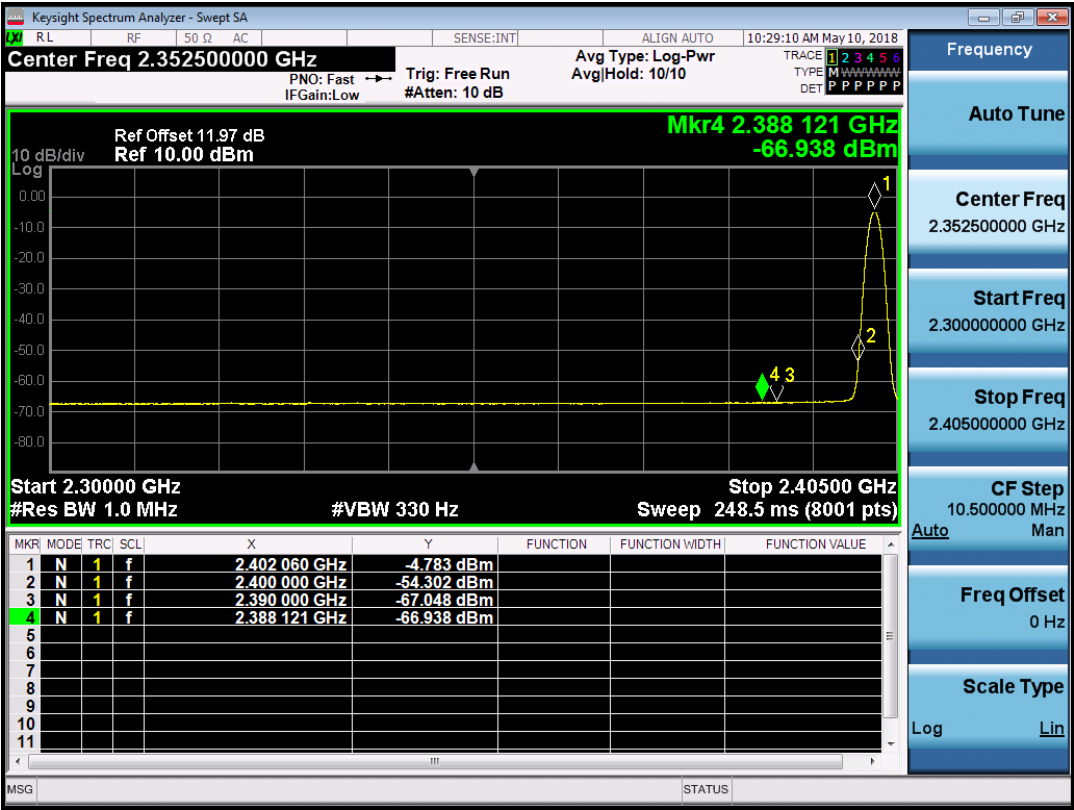
Result Table

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detect or	Limit [dBuV/m]	Verdi
GFSK_DH5	On	2368.6	-54.07	2.00	0	43.00	PEAK	74	PASS
GFSK_DH5	On	2388.1	-66.94	2.00	0	30.13	AV	54	PASS
GFSK_DH5	On	2390.0	-57.31	2.00	0	39.76	PEAK	74	PASS
GFSK_DH5	On	2390.0	-67.08	2.00	0	29.99	AV	54	PASS
GFSK_DH5	On	2483.5	-54.56	2.00	0	42.51	PEAK	74	PASS
GFSK_DH5	On	2483.5	-66.12	2.00	0	30.95	AV	54	PASS
GFSK_DH5	On	2500.0	-56.47	2.00	0	40.60	PEAK	74	PASS
GFSK_DH5	On	2500.0	-66.94	2.00	0	30.13	AV	54	PASS

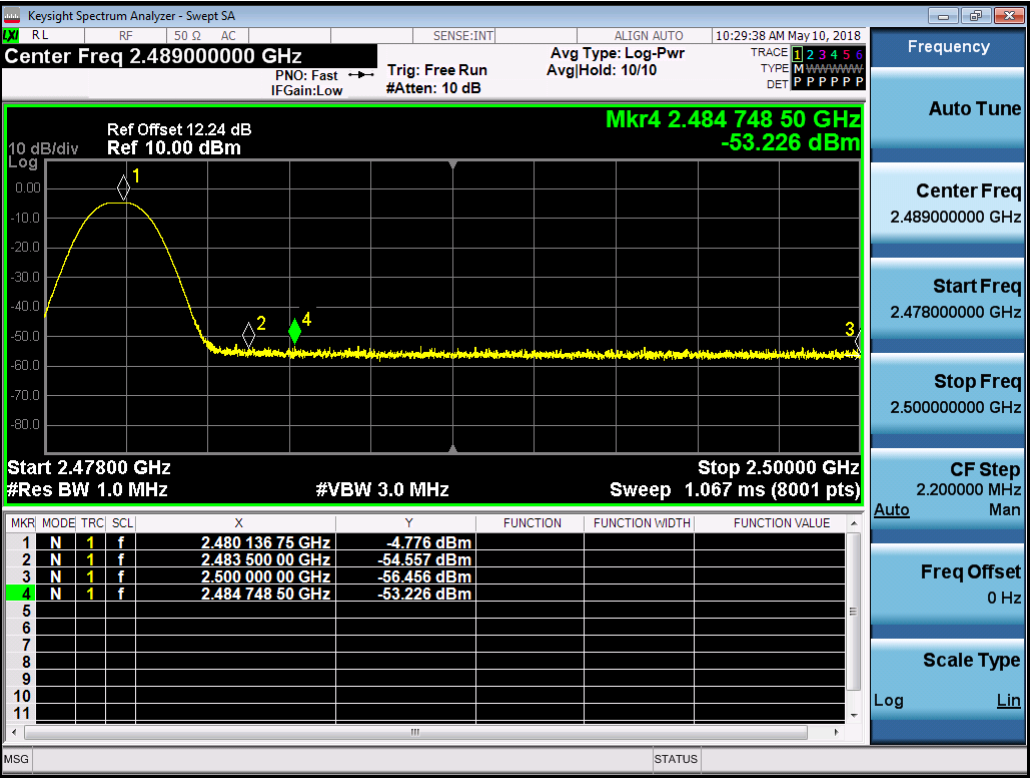
Test Graph



Restrict-band band-edge measurements_2402_AV_DH5



Restrict-band band-edge measurements_2480_PEAK_DH5



Restrict-band band-edge measurements_2480_AV_DH5

